

## Health information literacy meets evidence-based practice

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The public outcry over the revised guidelines for breast cancer screening last fall should have been a wake-up call for all librarians involved with health information literacy and evidence-based practice (EBP). Judging from the magnitude of the reaction, there is much to be done to improve the public's awareness of, access to, and use of quality health information.

Setting aside the role of the news media in exploiting sound bites and providing one-sided arguments, librarians should seize opportunities like this one to strengthen our role in supporting health information literacy. It is hard to envision that a well-informed public would have reacted so adversely to a recommendation that all women over fifty do not necessarily need annual mammograms and that instead women need to talk to their physicians to determine their own best course [1].

At a more basic level, consumers spend millions of dollars each year purchasing so-called medical self-help books that often suggest extraordinary and unsubstantiated claims that are not supported by scientific studies. One such book, *Ultimate Healing: World's Greatest Treasury of Health Secrets*, suggests that "carrots can reduce your cholesterol by 20%." This is based on a published report of 5 Scottish men who ate about half a pound of carrots for breakfast everyday for 3 weeks. Their average cholesterol dropped from 255 to 228, actually an 11% reduction. Unfortunately, due to the limitations of the study design, the researchers could not say if it was the carrots, not eating their usual breakfast, or perhaps the Hawthorne effect of being in a study that caused the reduction. This is hardly convincing evidence [2]!

Two strategies can help address the problem of recognizing good health information: health information literacy and EBP. Groups of medical librarians have been on the front lines of each of these

strategies and now need to join forces to increase the awareness of the public as to what constitutes quality evidence to support good decisions in health care.

Health literacy is defined by the Institute of Medicine as the "degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions" [3]. The Medical Library Association's (MLA's) definition is more detailed and further defines health information literacy as "the set of abilities needed to: recognize a health information need; identify likely information sources and use them to retrieve relevant information; assess the quality of the information and its applicability to a specific situation; and analyze, understand, and use the information to make good health decisions" [4].

Simply stated, health literacy is about consumers being able to understand the medical information their caregivers give them or they find through the Internet and being able to use that information to make good decisions about their own course of care. Many medical librarians offer services to help patients and consumers find the best available and current information. MLA offers a wealth of resources and information to help establish and enhance such services [5]. The National Library of Medicine provides access to reliable, up-to-date health information through its free MedlinePlus website at [www.nlm.nih.gov/medlineplus/](http://www.nlm.nih.gov/medlineplus/).

EBP is based on two fundamental principles: patient values and preferences are an essential part of the decision process; and the better the research the more confident one can be with the decision [6]. Health literacy is part of the first principle and essential to informed patient preferences. Using the best research means that those preferences are not based on anecdotal hearsay or self-reporting, but rather on valid studies that stand up to

the scrutiny of critical appraisal. Consumers need to understand that not all evidence is valid and that there are factors such as the size of the study, the exact methodology for conducting the study, and potential conflicts of interest that can affect the accuracy of the results.

Many medical librarians have taken continuing education courses and workshops in EBP and are familiar with the criteria for determining the quality of studies. These librarians work primarily with clinical staff and students in schools of medicine, nursing, physical therapy, and physicians assistants.

The logical and necessary extension of this support for EBP for medical, nursing, and allied health professionals is to help consumers think more critically about the evidence used to substantiate medical claims. A well-informed consumer could recognize the potential problems with the Scottish carrot study: no comparison or control group, no randomization of participants in the study to distribute prognostic factors evenly between the groups, no discussion of other activities or dietary changes, small sample size, and no blinding to treatment.

A well-informed consumer could choose to review the Cochrane Collaboration Systematic Review on "Screening for Breast Cancer with Mammography" that was published in October 2009. This review included the results of 7 trials that involved 600,000 women who were randomly assigned to receive screening mammograms or not. Their conclusion stated in plain English is that it is:

estimated that screening leads to a reduction in breast cancer mortality of 15% and to 30% over diagnosis and over treatment. This means that for every 2,000 women invited for screening throughout 10 years, one will have her life prolonged. In addition, 10 healthy women, who would not have been diagnosed if there had not been screening, will

be diagnosed as breast cancer patients and will be treated unnecessarily. Furthermore, more than 200 women will experience important psychological distress for many months because of false positive findings. [7]

Both reports, the US Preventive Services Task Force and Cochrane review, suggest that the decision for screening should be an individual one and take patient context into account, including the patient's values regarding specific benefits and harms.

The Patient Protection and Affordable Care Act of 2010 has focused attention on major reforms, including greater use of evidence-based medicine, shared decision making, comparative effectiveness research, and transparency of cost and quality information. Collectively, these efforts are at the heart of evidence-based health care. Yet it is the acceptance of evidence-based health care by the consumer that will greatly determine its success or failure. If consumers reject it, do not understand it, or see it as an inappropriate way to make decisions, then the movement and the efforts may fail. A recent study of consumers' attitudes toward health care found that there is a "disconnect between the central tenets of evidence-based health care and the knowledge, values, and beliefs held by

many consumers" [8]. Some of the beliefs found to be held by consumers that are at odds with EBP are: all care meets minimum quality standards; medical guidelines are inflexible; more care and newer care are better; and more costly care is better. For consumers to truly engage in using evidence to help inform their decision making, they need to value the use of evidence in making those decisions.

As the debate over health care reform continues and the move toward more objective information about what really works medically and for whom continues, librarians will need to be sure that our support for health literacy includes components of EBP. This is, after all, one of the guiding principles of MLA: Quality information is essential for improved health.

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